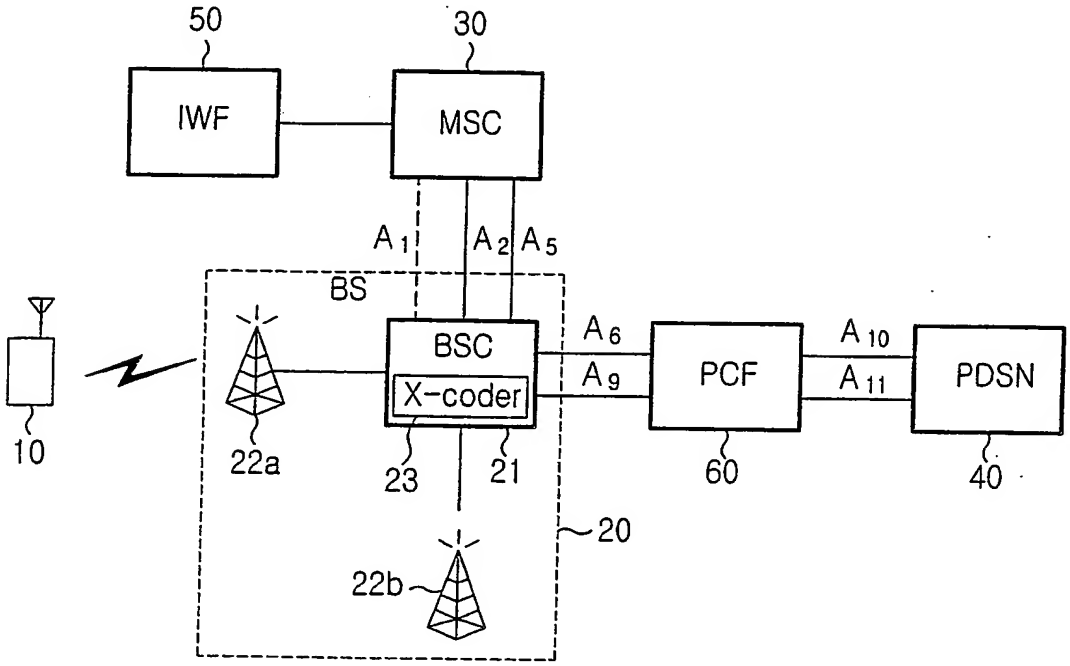

50
30
IWF
MSC
A1
A2
A5
BS
BSC
X-coder
A6
A9
PCF
A10
A11
PDSN
10
22a
23
21
60
40
20
22b

FIG.1

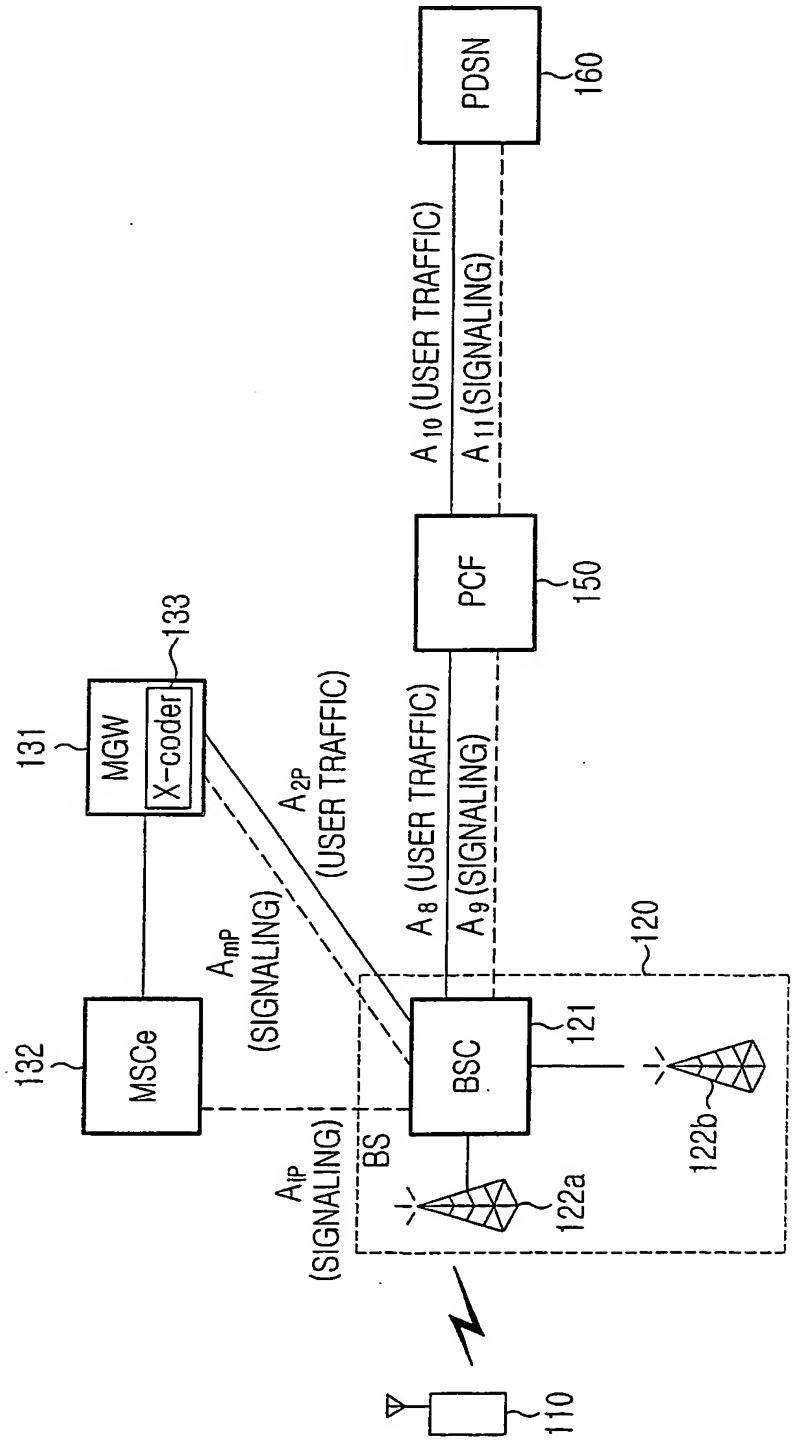

PDSN
160
A10 (USER TRAFFIC)
A11 (SIGNALING)
PCF
150
A8 (USER TRAFFIC)
A9 (SIGNALING)
120
133
131
MGW
X-coder
A2P
(USER TRAFFIC)
AmP
(SIGNALING)
132
MSCe
BSC
121
BS
AIP
(SIGNALING)
122a
122b
110

FIG.2

IOS A1p	IOS A1p	EVRC/SMV	EVRC/SMV	IOS Amp	IOS Amp
SUA	SCCP	FP	FP		
SCTP	M3UA	RTP*	GRE*		
	SCTP	UDP		SCTP	TCP/UDP
IP	IP	IP	IP	IP	IP
L2	L2	L2	L2	L2	L2
L1	L1	L1	L1	L1	L1
Case1	Case2	Case1	Case2	Case1	Case2
A1p interface		A2p interface		Amp interface	

FIG.3

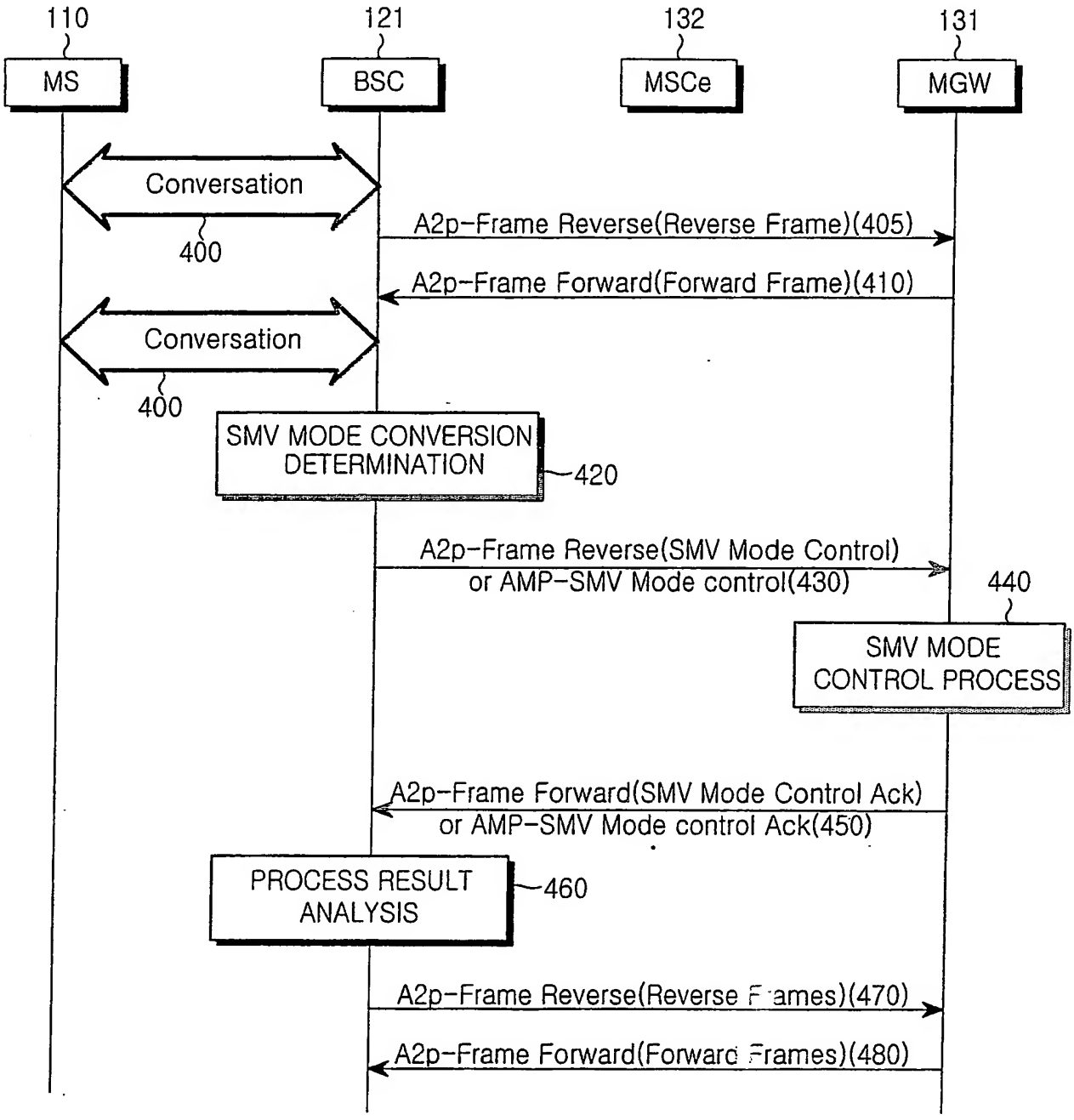

110
MS
121
BSC
132
MSCe
131
MGW
Conversation
400
A2p-Frame Reverse(Reverse Frame)(405)
A2p-Frame Forward(Forward Frame)(410)
Conversation
400
SMV MODE CONVERSION DETERMINATION
420
A2p-Frame Reverse(SMV Mode Control) or AMP-SMV Mode control(430)
440
SMV MODE CONTROL PROCESS
A2p-Frame Forward(SMV Mode Control Ack) or AMP-SMV Mode control Ack(450)
PROCESS RESULT ANALYSIS
460
A2p-Frame Reverse(Reverse Frames)(470)
A2p-Frame Forward(Forward Frames)(480)

FIG.4A

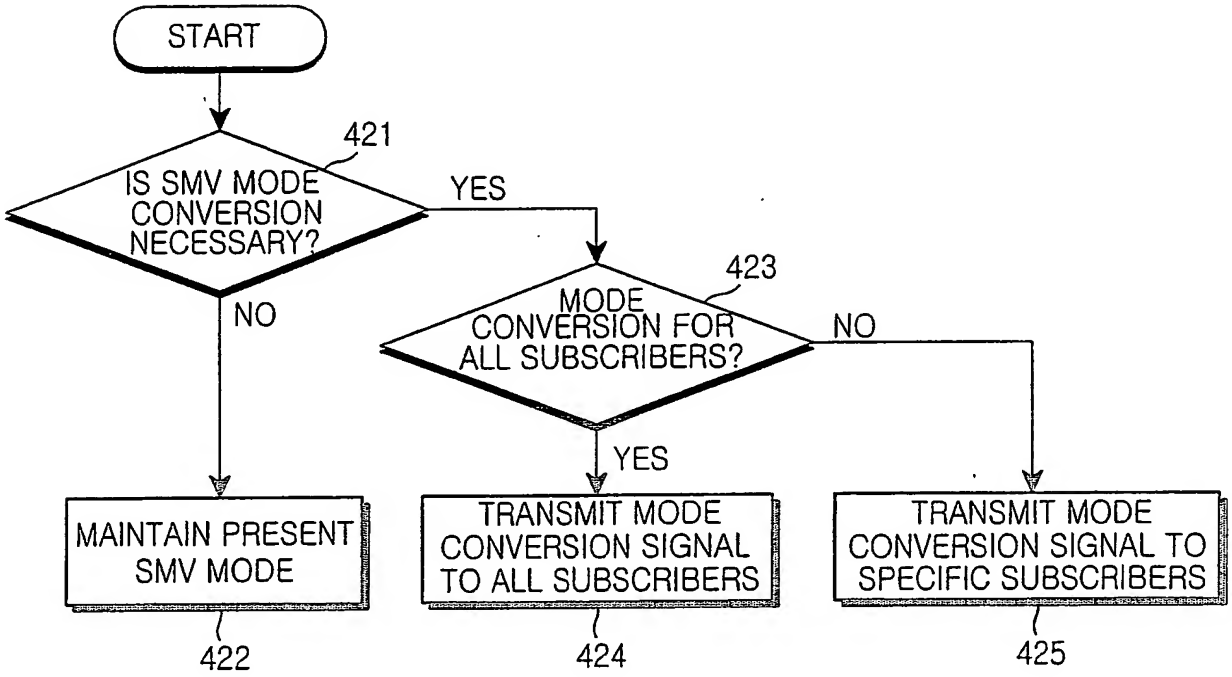

START
421
IS SMV MODE CONVERSION NECESSARY?
YES
NO
423
MODE CONVERSION FOR ALL SUBSCRIBERS?
NO
YES
MAINTAIN PRESENT SMV MODE
TRANSMIT MODE CONVERSION SIGNAL TO ALL SUBSCRIBERS
TRANSMIT MODE CONVERSION SIGNAL TO SPECIFIC SUBSCRIBERS
422
424
425

FIG.4B

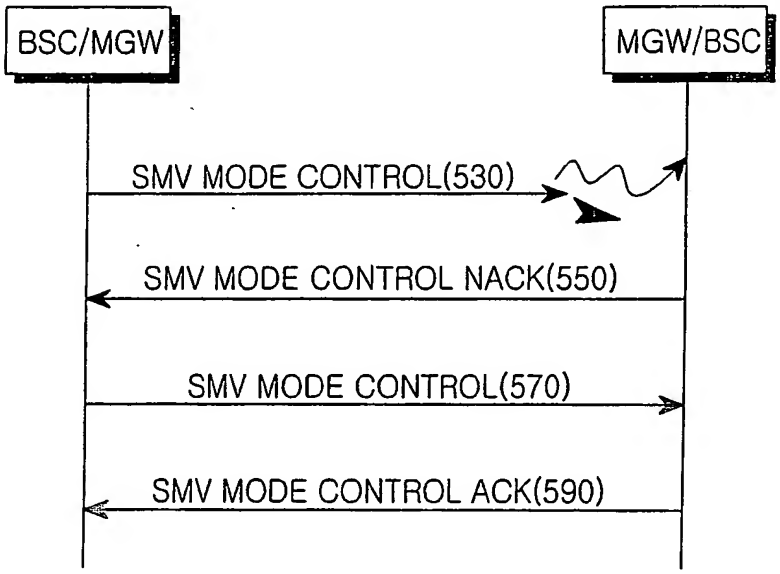

BSC/MGW
MGW/BSC
SMV MODE CONTROL(530)
SMV MODE CONTROL NACK(550)
SMV MODE CONTROL(570)
SMV MODE CONTROL ACK(590)

FIG.5

Information Element	Element Direction	Type
Message Type	BSC -> MGW	M
Frame Protocol Control Procedure	BSC -> MGW	O
Time Synchronization Information	BSC -> MGW	O
Reverse Layer 3 Data	BSC -> MGW	O
Message CRC	BSC -> MGW	M

FIG.6

Information Element	Element Direction	Type
Message Type	BSC -> MGW	M
Frame Protocol Control Procedure	BSC -> MGW	O
Mode Control Information	BSC -> MGW	O
Cause	BSC -> MGW	O
Forward Layer 3 Data	BSC -> MGW	O
Message CRC	BSC -> MGW	M

FIG.7

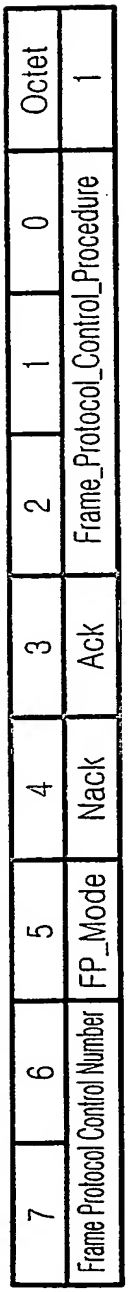

Octet
1
0
1
2
3
4
5
6
7
Frame_Protocol_Control_Procedure
Ack
Nack
FP_Mode
Frame Protocol Control Number

FIG.8

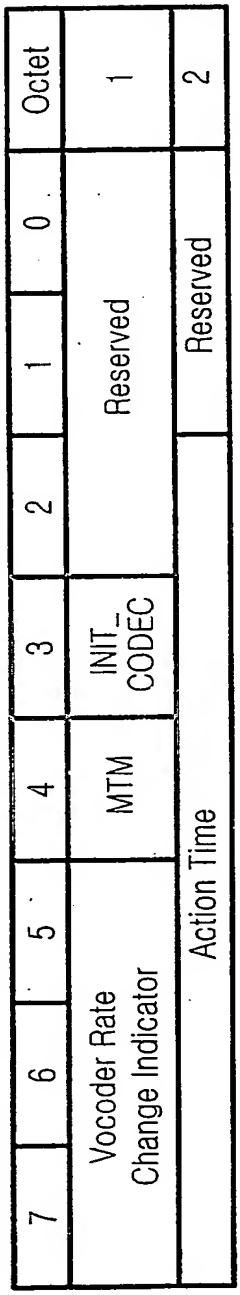
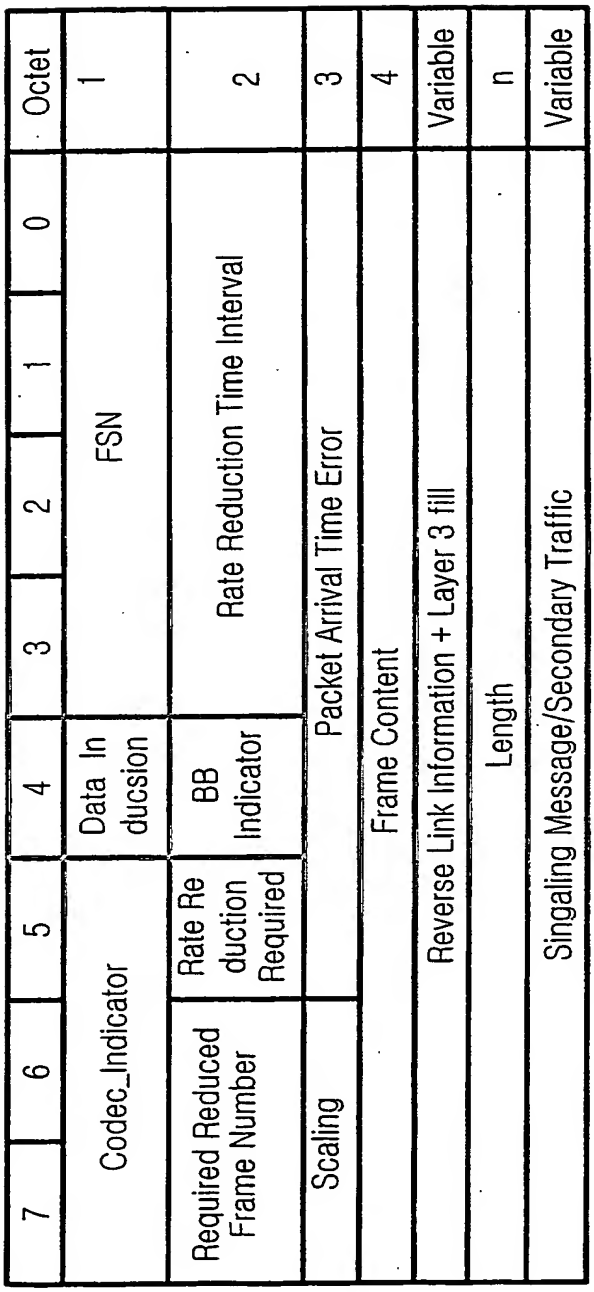

Octet
1
2
0
Reserved
1
2
3
INIT_ CODEC
Reserved
4
MTM
5
Action Time
6
Vocoder Rate Change Indicator
7

FIG.9



7	6	5	4	3	2	1	0	Octet
Codec_Indicator			Data In ducsion	FSN				1
Required Reduced Frame Number		Rate Re duction Required	BB Indicator	Rate Reduction Time Interval				2
Scaling			Packet Arrival Time Error					3
Frame Content								4
Reverse Link Information + Layer 3 fill								Variable
Length								n
Singaling Message/Secondary Traffic								Variable

FIG. 10

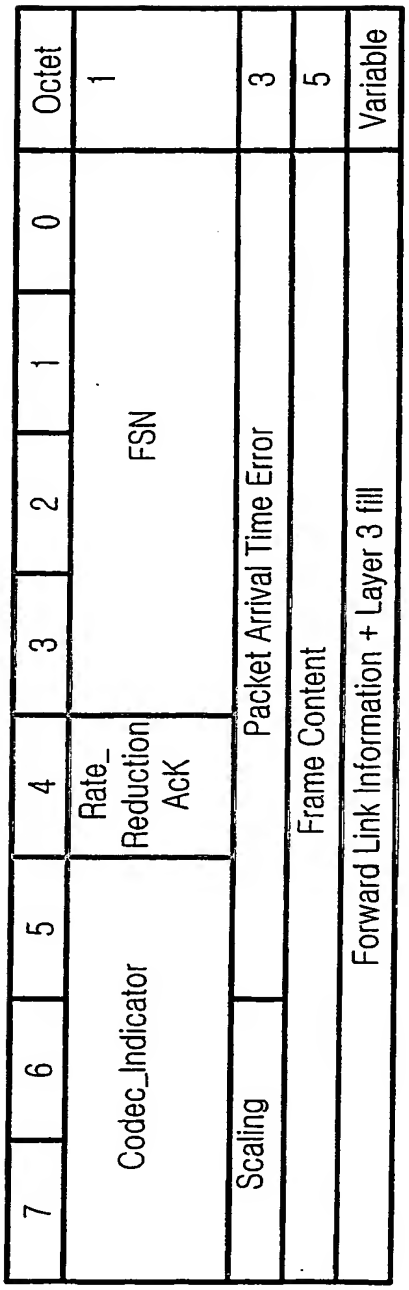

7
6
5
4
3
2
1
0
Octet
1
FSN
Rate_ Reduction AcK
Codec_Indicator
3
Packet Arrival Time Error
Scaling
5
Frame Content
Variable
Forward Link Information + Layer 3 fill

FIG.11

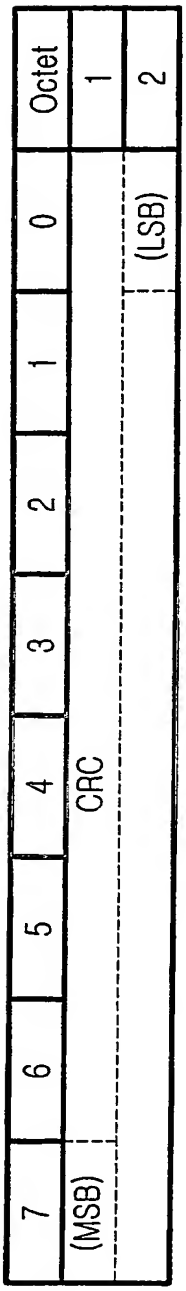


FIG.12

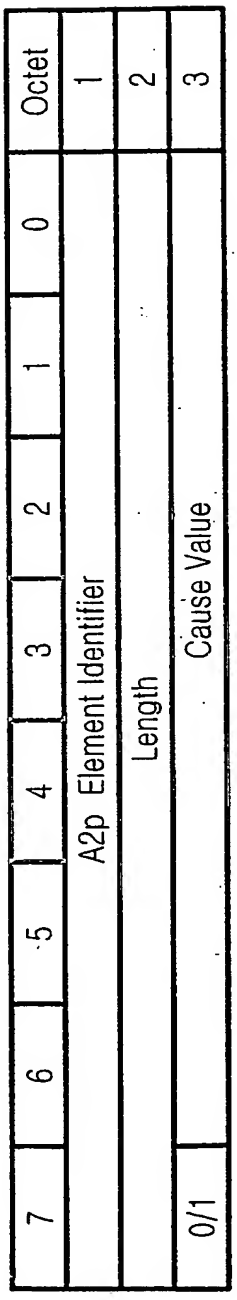

Octet
1
2
3
7
6
5
4
3
2
1
0
A2p Element Identifier
Length
Cause Value
0/1

FIG.13

Information Element	Element Direction	Type	
Message Type(Amp)	BSC< -> MGW	M	
Call Connection Reference	BSC< -> MGW	O	R
Mobile Identity(IMSI)	BSC< -> MGW	O	R
Mobile Identity(ESN)	BSC< -> MGW	O	C
A2p Bearer ID	BSC< -> MGW	O	C
Rate Reduction Information	BSC< -> MGW	O	R

FIG.14

Information Element	Element Direction	Type	
Message Type(Amp)	MGW -> BSC	M	
Call Connection Reference	MGW -> BSC	O	R
Mobile Identity(IMSI)	MGW -> BSC	O	R
Mobile Identity(ESN)	MGW -> BSC	O	C
A2p Bearer ID	MGW -> BSC	O	C
Rate Control Information	MGW -> BSC	O	R
Cause	MGW -> BSC	O	R

FIG.15